CLAIMS

WHAT IS CLAIMED IS:

1. An integral reflector and heat sink for use in a projector assembly, comprising:

a reflector portion comprising an integrated heat sink; and

a lamp receiving opening defined in said reflector portion.

2. The integral reflector and heat sink of claim 1, wherein said heat sink comprises a plurality of cooling fins.

3. The integral reflector and heat sink of claim 1, wherein said reflector portion comprises a metallic material.

4. The integral reflector and heat sink of claim 3, wherein said metallic material comprises zinc.

5. The integral reflector and heat sink of claim 3, wherein said metallic material comprises aluminum.

6. The integral reflector and heat sink of claim 1, further comprising a lamp engaging mechanism coupled to said lamp receiving opening for mechanically coupling a lamp assembly to said reflector.

7. A light generation assembly, comprising:

an integral reflector and heat sink;

a lamp receiving opening defined in said integral reflector and heat sink;

a lamp assembly replaceably coupled to said integral reflector and heat sink and extending at least partially through said lamp receiving opening;

a housing configured to facilitate movement of said light generation assembly between an operating configuration and a lamp replacement configuration; and

a fan assembly coupled to said housing.

8. The assembly of claim 7, wherein said integral reflector and heat sink comprises a plurality of cooling fins.

9. The assembly of claim 7, wherein said integral reflector and heat sink comprises a metallic material.

10. The assembly of claim 9, wherein said metallic material comprises zinc.

11. The assembly of claim 9, wherein said metallic material comprises aluminum.

12. The assembly of claim 7, further comprising guide rods slidingly coupled to said housing through holes defined in said housing and coupled to said integral reflector and heat sink for facilitating said movement between said operating configuration and said lamp replacement configuration wherein said operating configuration comprises locating said integral reflector and heat sink being within said housing and said lamp replacement configuration comprises locating said integral reflector and heat sink at least partially outside of said housing.

13. The assembly of claim 7, further comprising guide rails coupled to said housing and disposed between said integral reflector and heat sink and said fan assembly for moving said fan assembly between an operating configuration wherein said fan assembly is substantially inline with said integral reflector and heat sink and a lamp replacement configuration wherein said fan assembly is substantially offline with said integral reflector and heat sink.

14. The assembly of claim 7, further comprising guide rails coupling said fan assembly and said housing, a linkage member coupling said integral reflector and heat sink and said fan assembly wherein said linkage member, and a slot defined in said housing for moving said light generation assembly from an operating configuration wherein said integral reflector and heat sink is adjacent said fan assembly and a lamp replacement configuration wherein said fan assembly is drawn away from said integral reflector and heat sink and said integral reflector and heat sink is rotated with respect to said housing.

15. A projector assembly, comprising:

a light generation assembly having an integral reflector and heat sink, a lamp receiving opening defined in said integral reflector and heat sink, a lamp assembly replaceably coupled to said integral reflector and heat sink and extending at least partially through said lamp receiving opening, and a housing for mounting said light generation assembly and moving said light generation assembly between an operating configuration and a lamp replacement configuration; and

a projection assembly optically coupled to said light generation assembly.

16. The assembly of claim 15, wherein said projection assembly comprises an liquid crystal display.

17. The assembly of claim 15, wherein said projector assembly comprises a digital mirror device.

18. A method of using a light generation assembly, comprising:

placing said light generation assembly in an operating configuration in which a fan assembly is placed near an integral reflector and heat sink;

selectively operating a lamp assembly which is replaceably coupled to said integral reflector and heat sink; and

removing heat generated by said operating of said lamp assembly by flowing air over said integral reflector and heat sink with said fan assembly.

19. The method of claim 18, further comprising replacing said lamp assembly by moving said light generation assembly to a lamp replacement configuration to facilitate access to said lamp assembly, removing said lamp assembly from said integral reflector and heat sink, coupling a new lamp assembly to said integral reflector and heat sink, and moving said lamp generation assembly to an operating configuration.

20. The method of claim 19, wherein moving said light generation assembly to a lamp replacement configuration comprises withdrawing said integral reflector and heat sink from within a housing and wherein said moving said light generation assembly to an operating configuration comprises placing said integral reflector and heat sink substantially within said housing to which said fan assembly is coupled.

21. The method of claim 19, wherein moving said light generation to a lamp replacement configuration comprises moving said fan assembly away from said integral reflector and heat sink and wherein said moving said light generation assembly to an operating configuration comprises moving said fan assembly toward said integral reflector and heat sink.

22. The method of claim 21, wherein said lamp assembly, integral reflector and heat sink, and said housing are located on a common axis and said fan assembly and moving said fan assembly comprises moving said fan assembly substantially normally to said common axis

23. The method of claim 21, wherein said lamp assembly, integral reflector and heat sink, and said housing are located on a common axis and moving said fan assembly comprises moving said fan assembly along said common axis.

24. The method of claim 23, further comprising causing said integral reflector and heat sink to rotate with respect to said housing in response to moving said fan assembly.

25. A method of forming a light generation assembly, comprising:

forming an integral reflector and heat sink having a reflecting portion and a lamp receiving opening defined therein;

coupling said integral reflector and heat sink to a housing;

coupling a fan assembly to said housing; and

replaceably coupling a lamp assembly to said integral reflector and heat sink extending at least partially through said lamp receiving opening.

26. The method of claim 25, wherein coupling said integral reflector and heat sink to said housing comprises forming guide holes in said housing and coupling guide rods to said integral reflector and heat sink and to said guide rods whereby said displacement of said guide rods with respect to said guide holes causes said integral reflector and heat sink to be moved from an operating configuration within said housing to a lamp replacement configuration outside of said housing.

27. The method of claim 25, wherein coupling said fan assembly to said housing comprises coupling guides to said housing wherein is located said integral reflector and heat sink and moveably coupling said fan assembly to said guide rails so as to facilitate movement of said fan assembly from an operating configuration near said integral reflector and heat sink to a lamp replacement configuration at a second location away from said integral reflector and heat sink.

28. The method of claim 27, further comprising locating said lamp assembly, integral reflector and heat sink, and said housing on a common axis so as to facilitate movement of said fan assembly substantially normal to said

common axis between said operating configuration and said lamp replacement configuration.

29. The method of claim 27, further comprising locating said lamp assembly, integral reflector and heat sink, and said housing on a common axis so as to facilitate movement of said fan assembly wherein said fan assembly is moved along said common axis between said operating configuration and said lamp replacement configuration.

30. The method of claim 29, further comprising coupling a linkage member to said fan assembly and said integral reflector and heat sink through a slot in said housing whereby said integral reflector and heat sink rotated with respect to said housing in response to movement of said linkage member due to movement of said fan assembly.

31. The method of claim 25, further comprising forming cooling fins on said integral reflector and heat sink.

32. A light generation system, comprising;

means for producing light; means for simultaneously reflecting said light and removing heat generated by producing said light; and means for facilitating access to said means for producing light.

33. The light generation system of claim 32, wherein said means for facilitating access to said means for producing light comprises means for providing relative displacement between a fan assembly and said means for simultaneously reflecting said light and removing heat generating by producing said light.